

FOUR NEW SPHECID WASPS FROM WESTERN
NORTH AMERICA

(Hymenoptera: Sphecidae, Larrinae)

FRANCIS X. WILLIAMS

*Research Associate, Department of Entomology
California Academy of Sciences*

Tribe TACHYTINI

Tachysphex nitelopteroides Williams, new species

(Figure 1)

Female holotype.—Length 6:30 mm. Generally pale reddish; head black, clypeus and antennae except the infusate 4 apical segments, pale reddish, mandibles except apices, yellowish red; mesosternum in part blackish; middle and hind tarsi slightly infusate, fore tarsal comb pale yellowish, the spur pale, meso- and metatibial spurs dark; wings mainly hyaline, but in the fore wings there is a feeble infusate band extending from the costa, through the base of the marginal cell, the apex of the first submarginal cell, all of the second submarginal, and the apex of the second discoidal cell, though diffusing slightly beyond these limits; venation rather pale brown, costa darker, stigma blackish; fourth tergite with some blackish on either side. Vestiture generally sparse, golden on frons, genae and occiput, somewhat silvery on base of clypeus, appressed silvery pile on pleurae and sternum of mesothorax, on disc and apex of propodeum, and an obvious patch laterally on the second tergite. Clypeus shining, disc convex with some large punctures, its produced portion gently outbowed, margin smooth and rather wide, lateral angles strong; mandibles well notched beneath and provided with some rather long pale erect hairs; antennae slender, segments 3 and 4 subequal; frons very finely punctate, giving it a granulate appearance; vertex with many fine separate punctures; the flattened posterior ocelli are shining and there is a depression ending as broad wedge beyond them; interocular space at vertex slightly less than antennal segments 2 plus 3. Thorax smooth and shining, though under greater magnification finely punctured; disc of propodeum coriaceous, posterior face with a smooth area in which there is a wedge-shaped depression in its upper part, the pleurae shining and with fine scattered punctures. Forewings with marginal cell distinctly surpassing third submarginal, second submarginal cell very narrow at marginal cell; in the hindwings the transverse-median crossvein is about half the length of the second abscissa of the median vein. Abdomen shining, pygidium polished, narrow and pointed, bounding carinae very slightly inbowed, disc finely reticulate and with sparse large punctures.

Male allotype.—Length 4 mm. Dorsulum and abdomen shining. Black; clypeal rim, mandibles, palps mostly, basal part of antennae, pronotum, propleurae, wing bases, scutellum except base, and metanotum reddish, legs blackish to deep brown, paler from tibiae apically, posterior legs the darkest; venation brownish. Head finely granulate punctate, more clearly punctate on the shining vertex and clypeus; mandibles sharply pointed, strongly notched beneath; clypeus with the disc convex, the produced part gently

rounded out and with lateral angles, otherwise with no teeth; antennae pilose, with segment 3 slightly shorter than segment 4. Thorax finely punctate; dorsum of propodeum granulate punctate, sides polished, posterior face with a groove. Fore femora beneath near base with a small emargination. Venation as in female. Last visible sternite roundly emarginate, lobes acute. Vestiture (the specimen has been somewhat rubbed): silvery pile on frons, genae, thorax, more or less, base of legs and femora in part, and propodeum, and with a conspicuous patch on side of tergite 2.

Holotype female, LA PAZ, BAJA CALIFORNIA, MEXICO, October 11, 1954 (F. X. Williams), at flowers of small prostrate *Euphorbia*; *allotype*, male, same date, except October 12; both deposited in the California Academy of Sciences, San Francisco.

Named for its superficial resemblance to some of the species of wasps belonging to the genus *Nitelopterus*, in color, wing infuscation in the female, and small size. From the more typical *Tachysphex* the new species differs chiefly in its marginal cell distinctly surpassing the short third submarginal cell.

Tribe MISCOPHINI

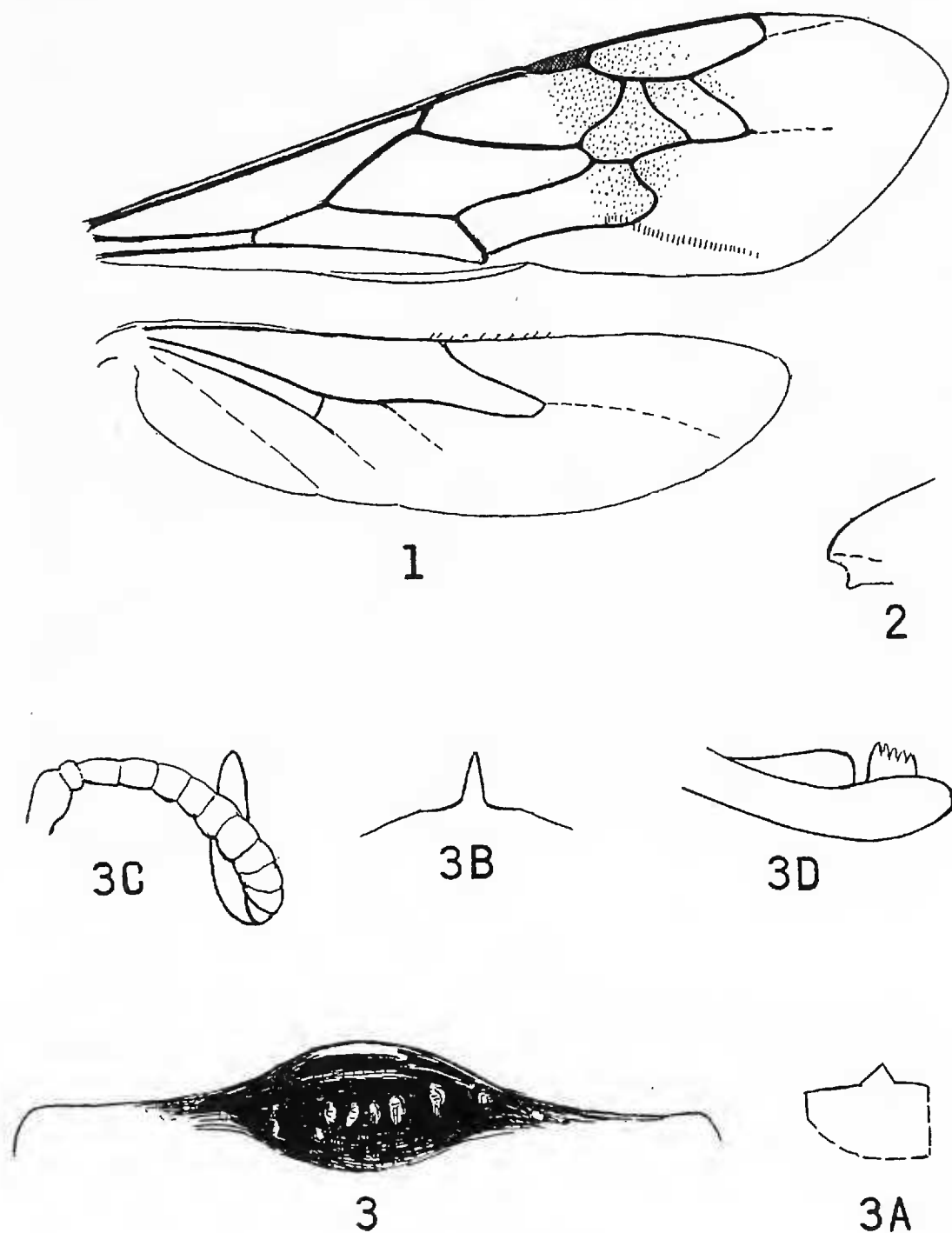
Solierella boregensis Williams, new species

(Figure 2)

Female holotype.—Length 5 mm. Black; mandibles reddish for apical half; lobes of pronotum, and tegulae in part, a long spot anteriorly beneath on femora 1 and 2, and a stripe above on tibiae 2 and 3, creamy white; tarsi chiefly reddish brown; abdomen red. Mandibles not emarginate beneath, malar space nearly two-thirds as long as width of mandible at base; clypeus broadly cuneate anteriorly, its apex very slightly extended toothlike, and with a sharp arched carina that is well above the true apical clypeal margin, this raised portion as seen in lateral profile is emarginate and drops steeply to the clypeal margin. A well-formed V arises mesad above the antennae and expands broadly and less definitely to the compound eyes that each ridge follows to partly embrace the posterior ocelli. Ocelli forming approximately a right-angle triangle; vertex rather coarsely punctate, subshining; antennae slender, articles 3 and 4 subequal, their apical width about twice their length. Scutum and scutellum shining, the moderate punctures well spaced, thus not forming any subcoriaceous areas, pleurae largely reticulate; disc of propodeum, with a median furrow, sides very finely striate, posterior face with rather coarse striae and a subtriangular depression. Fore tarsi with a comb of sparse bristles, there being one long bristle on articles 1–4, those on 1–3 fully twice as long as the middle width of their respective articles. First recurrent and the first transverse-cubital veins interstitial. Abdomen shining, closely and finely hair-punctate. Vestiture: silvery pile, dense on frons, clypeus, genae, base of pronotum, pleurae, edging of propodeal disc, legs in part, and somewhat banding the abdomen.

Male allotype.—Length 4 mm. Slender. Black; mandibles reddish for their apical half; prothoracic lobes, a long spot anteriorly beneath on femora

1 and 2, and a stripe above on all tibiae, tegulae in part, creamy white, tarsi brownish; abdomen red, but the base and apex in part blackish. Clypeus with the median portion tumid though slightly angled in profile, cuneate anteriorly and provided with a strong keel that in lateral profile ends as a simple and



EXPLANATION OF FIGURES

Fig. 1, *Tachysphex nitelopteroides* Williams. Female, holotype. Fig. 2, *Solierella boregensis* Williams. Female, holotype. Clypeus distal end in lateral aspect to show vertical emargination. Fig. 3, *Solierella semirugosa* Williams. Female, holotype. Clypeus in fronta aspect; 3A, Female. Coxa to show dorsal process. 3B, Male, allotype. Clypeus, anterior margin; 3C, Male, allotype. Antenna to show the naturally reflexed 13th segment. 3D, Male, allotype. Aedeagal lobe, lateral aspect.

rather gross point; mandibles not excavate beneath, malar space from $\frac{3}{4}$ to $\frac{4}{5}$ the width of a mandible at base; antennae rather slender, thickest from articles 3–10, article 3 expanding from its base so that the length is less than twice its apical width, articles 3 and 4 subequal, 13 about $\frac{1}{3}$ longer than 12. Scutum and scutellum shining, rather closely punctate, pleurae shining and strongly punctate; disc of propodeum subopaque, granulate and with a strong median groove, pleurae with a fine granulate appearance. First recurrent vein almost attaining the second submarginal cell. Abdomen shining, finely and closely hair-punctate, the segments not thickened apically. Aedeagus, as in a paratype of *Solierella vierecki* (Rohwer) from Boulder, Colorado, with the exception that in *S. boregensis* there is a very slight emargination along the outer (non-dentate) side of the uncal lobe. Vestiture: dense silvery pile, as in female.

Holotype female and allotype male, BOREGO, SAN DIEGO COUNTY, CALIFORNIA, April 29, 1955, (F. X. Williams) deposited in the California Academy of Sciences.

Differs from *Solierella vierecki* (Rohwer), its near relative, that also occurs in the Borego Desert area, but has been more commonly found in the lower foothills region about La Mesa, near San Diego, in being much more heavily clothed with silvery pile, which obscures the frontal carinae, the V appearing slightly narrower in the new species. *Solierella boregensis* has no pronotal markings, the dorsulum is polished and much less strongly punctate than in *S. vierecki*, where these surfaces are partly coriaceous. In *S. boregensis*, holotype, ♀, the clypeus shows a vertical emargination, and the fore tarsal bristles are long, whereas in *S. vierecki* these are minute.

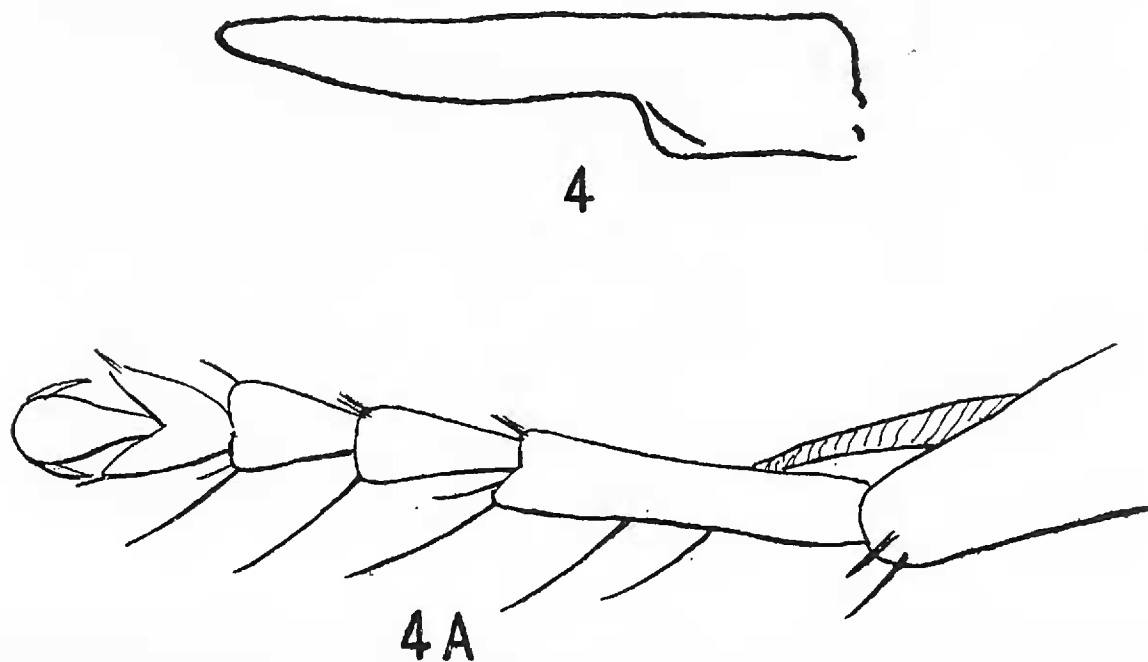
***Solierella semirugosa* Williams, new species**

(Figures 3–3D)

Female holotype.—Length 4.2 mm. Black: generally shining above; mandibles black at extreme base, then whitish to about middle, thence reddish; apex of scape beneath testaceous; apical portion of pronotal lobes, tegulae in part, postscutellum, a long spot beneath from apex of fore femora, a shorter spot on mid femora, and a stripe above on all tibiae, creamy white tinged with yellow; venation brownish, paler at wing bases, apex of fore wings slightly infumate; abdomen red, its extreme apex in part fuscous. Head much wider than high; clypeus widely arched mesad, disc tumid, not carinate, with strong punctures for its basal half and a good polished margin; mandibles only slightly emarginate beneath; practically no malar space; frons with the low rounded interantennal ridge expanding as a V-shaped subopaque and rugulose punctate area that rather suddenly widens to extend to the compound eyes to limit the vertex anteriorly; antennae slenderly subclavate, articles 3 and 4 subequal; vertex shining but closely and rather coarsely punctate; ocelli in approximately a right-angle triangles,

posterior ocelli somewhat more than their diameter from the compound eyes, these ocelli outwardly lying in a shallow depression. Pronotum short, collar somewhat sugulose; scutum and scutellum polished, with well separated punctures, the pleural punctation heavier, largely obscured by the silvery pile; disc of propodeum without bounding carinae, shining, coarsely sculptured, with a median carina in a groove that is strongest apically, and with well-spaced oblique and transverse carinulae, pleurae striate reticulate, posterior face with a wide shining top-shaped depression and rather coarse transverse striae. Bristles of fore tarsal comb, segments 1-4, generally one and one-half times longer than the width of their respective tarsal segments, in addition, there are two shorter spines anteriorly along the middle of fore tarsal segment 1, these spines a little longer than the width of the segment at their origin; dorsal process of hind coxae acute; second submarginal cell subtriangular, first and second submarginal cells each receiving a recurrent vein. Abdomen shining, with some very fine close punctures; pygidial area marked laterally by dark, short close-set bristles. Vestiture: silvery pile on the lower frons, genae, base of pronotum, mesopleurae, borders of propodeal disc, and rather incompletely banding the abdominal tergites.

Male allotype.—Length 4 mm. Black; marked as in female except abdomen has only an indication of reddish on the apex of some tergites, and the tarsal segments are generally creamy white; puncturation is about as in the female. Non-carinate clypeus with median gibbous portion strongly punctate and with a stout spike arising from its otherwise subtruncate margin; malar space about equal to one-half the width of the mandible at base; antennae with the 12 articles shorter than in female, article 13 greatly elongate so as to equal the sum of the six preceding articles,



EXPLANATION OF FIGURES

Fig. 4, *Solierella mandibularis* Williams. Female, holotype. Mandible from outer side, 4; fore tarsal comb, 4A.

and it is strongly hinged backwards, be the wasp alive or dead; the two posterior ocelli bounded posteriorly by a shallow, gently procurved depression that extends across the vertex. Aedeagal lobes, as viewed from side, each shows a short elevated row of teeth on the subclavate apical portion, while basad of this is an elongate lobe.

Holotype female and allotype male in fresh condition, BOREGO, SAN DIEGO COUNTY, CALIFORNIA, April 23 and 29, 1955, respectively (F. X. Williams). Paratypes: 3 females and 24 males, topotypical, taken in late April, 1955, May 11 and 12, 1955, and 2 females, topotypical, April 30, 1957 (F. X. Williams); all or nearly all these specimens were taken on *Euphorbia polycarpa*. Other paratypes of *Solierella semirugosa* are, 1 female, Borego, San Diego County, California, April 25, 1955 (P. D. Hurd), 1 female, Hopkins Wells, Riverside County, California (E. G. Linsley), 1 male, Palm Springs, Riverside County, June 2, 1953 (R. M. Bohart), 1 male, Davis, Yolo County, California, August 13, 1955 (R. M. Bohart) and 1 male, Davis, August 20, 1955 (A. T. McClay).

Perhaps closest to *Solierella timberlakei* Williams (1950), of which only the female holotype is known (locality, six miles south of Palm Springs, Colorado Desert, California). The male of *Solierella semirugosa* is easily recognized by its stout clypeal spike, backwards-directed 13th antennal segment and the lamina before the raised aedeagal comb. The female has the fore tarsal comb of bristles that are distinctly longer than the length of the middle joints of the fore tarsus, in *Solierella timberlakei* these bristles are only about half the length of the middle joints.

***Solierella mandibularis* Williams, new species**

(Figures 4 and 4A)

Female holotype.—Length 3.75 mm. Black; moderately shining and generally closely punctate; mandibles reddish apically, dull yellow mesad, black at base; two wide pronotal spots, edge of pronotal lobes, postscutellum, femora 1 and 2 with a spot anteriorly beneath, tibiae above, chiefly dull yellow; tarsi pale yellow to brown; venation testaceous. Head reticulate-punctate. Middle part of clypeus convex, shining, punctations few except at base, not carinate, margin truncate, marginal strip rather wide. Mandibles with a strong notch beneath near base; malar space at middle nearly equal to basal width of mandibles. Antennae rather slender, article 3 a little shorter than 4. Ocelli in about an equilateral triangle. Thorax closely punctate, metapleurae polished. Disc of propodeum reticulate, with some diverging basal striae and an apical trough, pleurae reticulate, posterior face reticulate and with some widely spaced transverse carinulae and a V-like

depression. Fore tarsal comb consisting of long pale spines of which there are three on segment 1, and one each on segments 2 and 3, and all of a length well exceeding the diameter of the tarsal segments at the point of attachment of these spines. Second submarginal cell receiving second recurrent vein. Tergites strongly punctate. Vestiture: moderate silvery pile.

Holotype female from CRONISE VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA, April 29, 1956; on *Prosopis* (P. D. Hurd, collector) and is on deposit in the California Academy of Sciences. Male unknown.

Separated from *Solierella albipes* (Ashmead) and *S. bridwelli* Williams by having a tarsal comb and by its much more generous malar space. The ventral mandibular notches are about equal in *S. mandibularis* and *S. albipes*, but in *S. bridwelli* it is much less developed.

PHORETIC SCELIONIDS ON GRASSHOPPERS OF THE GENUS MELANOPLUS

(Hymenoptera: Scelionidae)

U. N. LANHAM AND F. C. EVANS

*Saline Valley Farms, Saline, Michigan, and
Department of Zoology, University of Michigan*

In the course of an ecological study of the insect fauna of an old-field community¹ in southern Livingston County, Michigan, a number of grasshoppers of the genus *Melanoplus* were collected with one, two or three adult winged parasitic wasps, *Scelio bisulcus* (Ashmead), clinging to the undersurface of the abdomen. The numerous references in the literature to scelionids on North American grasshoppers are apparently based on two early records: that of Ashmead (1893:241) for a specimen of *Scelio* found on a "short-winged locust" and that of Warner (1903) for another taken from *Dichromorpha viridis*. Ashmead supposed that the wasp attaches itself to the grasshopper with the intention of finding out where the eggs were to be deposited. Recently, Channa Basavanna (1953) observed individuals of *Lepidoscelio viatrix* to leave the Indian grasshopper *Orthacris (Colemania)* when it oviposited and to lay their eggs in its egg masses. A general discussion of the phoretic relationship between scelionids and grasshoppers, together with a photograph of *L. viatrix* attached to its orthopteran host, was published by Brues (1917).

The abandoned field, situated on the Edwin S. George Reserve

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